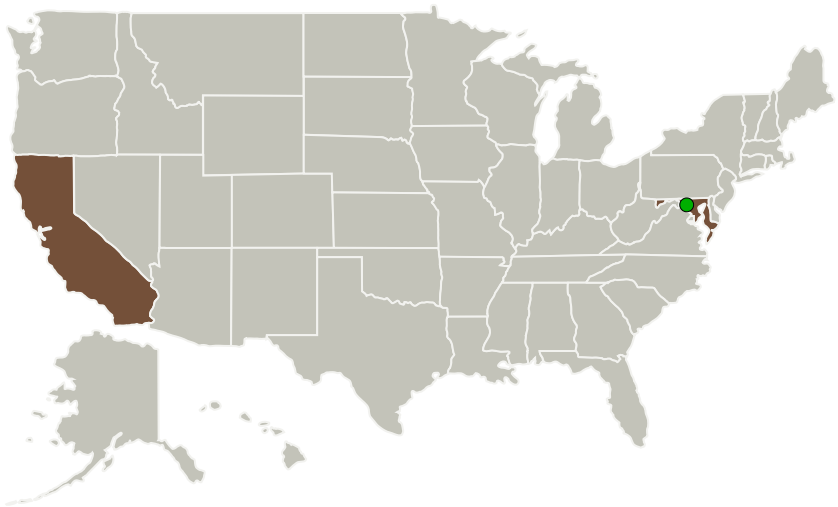
Elastic Deployable Composite Tubular Roll-Out Boom, Phase II

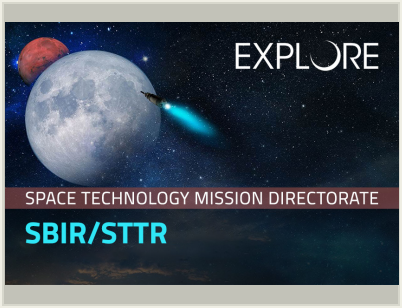
Completed Technology Project (2011 - 2013)

Project Introduction

Deployable Space Systems (DSS) has developed an affordable and ultra-lightweight elastically self-deployable Roll-Out Boom technology that provides affordability and mission-enabling performance features for current and future NASA missions. The Roll-Out Boom technology provides affordability and a significant performance increase in terms of extremely compact stowage volume, ultra-lightweight, broad scalability, high deployed frequency, high deployed strength, reliable/immediate/repeatable controlled deployment, high stiffness during deployment, good thermal/dimensional stability, highly conductive composite materials construction, space environmental survivability, and broad mission applicability. The Roll-Out Boom technology is applicable as an improved direct replacement to competing deployable structures, and is flexible in geometry, length, section, material, and construction to meet the most demanding mission requirements. The Roll-Out Boom is highly applicable as an enabling deployable structure for electric field sensors, antennas, gravity gradient booms, and magnetometer booms, or as a deployable structural platform for solar arrays, sunshades and/or other proprietary payloads. The technology innovation is applicable for practically all NASA and non-NASA missions as a direct replacement for classical state-of-the-practice deployable structure technologies.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
Deployable Space Systems, Inc(DSS)	Lead Organization	Industry	Goleta, California
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations	
California	Maryland

Project Transitions

June 2011: Project Start

May 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138826)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Deployable Space Systems, Inc (DSS)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Brian R Spence

Co-Investigator:

Brian Spence

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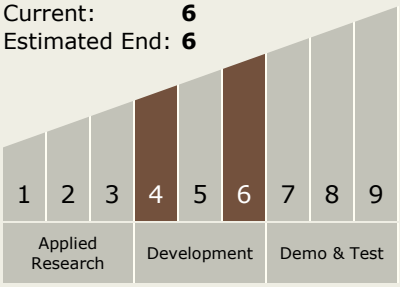
Technology Maturity (TRL)

Start: **4**
Current: **6**
Estimated End: **6**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.2 Observatories
    - TX08.2.2 Structures and Antennas

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System